ECE 530 Cloud Computing

Opportunities and Challenges

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What is the purpose and benefits?

- Cloud computing enables companies and applications, which are system infrastructure dependent, to be infrastructure-less.

- By using the Cloud infrastructure on "pay as used and on demand", all of us can save in capital and operational investment!

- Clients can:
  - Put their data on the platform instead of on their own desktop PCs and/or on their own servers.
  - They can put their applications on the cloud and use the servers within the cloud to do processing and data manipulations etc.

Cloud-Sourcing

- Why is it becoming a Big Deal:
  - Using high-scale/low-cost providers,
  - Any time/place access via web browser,
  - Rapid scalability; incremental cost and load sharing,
  - Can forget need to focus on local IT.
- Concerns:
  - Performance, reliability, and SLAs,
  - Control of data, and service parameters,
  - Application features and choices,
  - Interaction between Cloud providers,
  - No standard API – mix of SOAP and REST!
  - Privacy, security, compliance, trust…

Opportunities and Challenges

- The use of the cloud provides a number of opportunities:
  - It enables services to be used without any understanding of their infrastructure.
  - Cloud computing works using economies of scale:
    - It potentially lowers the outlay expense for start up companies, as they would no longer need to buy their own software or servers.
    - Cost would be by on-demand pricing.
    - Vendors and Service providers claim costs by establishing an ongoing revenue stream.
  - Data and services are stored remotely but accessible from "anywhere".

Cloud Computing Efficiencies